Amendments to the Specification:

Please amend the paragraphs of the specification as follows:

[0029] It should be noted that many alternative embodiments are also possible. For example, rather than a method, one alternative embodiment may comprise a receiver which is configured to receive the data traffic, rate indicator and pilot signals and process these signals as described above to demodulate and decode the received data traffic. Still another alternative embodiment may comprise a method (or system) as described above, but where a different set of signals is received.~~, for~~ For example, it is not necessary that a rate indicator channel be used for the purpose of supplementing the pilot signal ~~has~~ as a demodulation reference. It should also be noted that the methods and systems described herein are not limited to using three signals, but may be implemented with four or more signals. Still ~~another~~ other variations and alternative embodiments will be apparent to those of skill in the art upon reading this disclosure.

[0033] Base station 110 is also coupled to a ~~base station controller~~ switching station 130, for example, via a wireline link ~~network 140~~. ~~Network 140 couples~~ The connection to switching station 130 allows base station 110 ~~and base station 130~~ to communicate with various other system components. These system components may include other base stations, data ~~servers~~ server 140, public switched telephone ~~networks~~ network 150, the Internet 160, and the like. It should be noted that the system components utilized in the system of FIG. 1 and described above are exemplary and other systems may comprise other types and other combinations of devices.

[0065] In the embodiment where the signal is stored in a buffer before reaching the receiver, after [[.]] ~~After~~ the demodulation reference is obtained based on both the pilot signal and the rate indicator channel signal, the entire receiver is run again to demodulate the data channel. In the embodiment where signals were stored in each Rake finger, only the demodulation and combining portions of the Rake receiver have to be run again.

[0069] In this embodiment, the receiver regularly attempts to decode (or demodulate) the rate indicator and verifies whether the decoding (or demodulation) was successful, even before the entire frame has been received. (Early decoding of a channel is described in U.S. Pat. No.

6,282,250, entitled "Low Delay Decoding", and will not be described in detail here.) In one embodiment, each time the receiver attempts to decode (or demodulate) the rate indicator, it measures the pilot SNR accumulated from the beginning of the frame and compares it to a threshold value. If the accumulated pilot SNR is below the threshold, the decoding (or demodulation) of the rate indicator will likely be incorrect and the receiver will therefore not even attempt to decode (or demodulate) the rate indicator. If, on the other hand, the accumulated pilot SNR is above the threshold value, the receiver decodes (or demodulates) the rate indicator and verifies whether the decoding (or demodulation) was successful. In another embodiment, the receiver attempts to decode (or demodulate) the rate indicator regularly regardless of the accumulated pilot SNR. Those skilled in the art will appreciate that determining whether or not the rate indicator was successfully decoded (or demodulated) can be done in a number of ways.

[0076] One drawback of the second and third exemplary embodiments is that the data will be irrecoverable if the rate indicator was incorrectly decoded. If the early decoding provides incorrect rate indicator bits and the receiver does not detect this error, the re-encoded rate indicator modulation symbols will be incorrect. ~~Theses~~ These incorrect modulation symbols will be used by the receiver to then utilize the rate indicator channel as a demodulation reference, thereby creating an incorrect demodulation reference. This will cause the demodulation of the data channel to be erroneous. In many systems the rate indicator is encoded in such a way that it is difficult to accurately determine whether the rate indicator is correctly decoded or not. It would therefore be useful to have an embodiment that can recover from errors in early decodes of the rate indicator.

[0077] In a fourth exemplary embodiment, the receiver demodulates the data channel in two different ways and produces two outputs of the demodulated data channel. The first output is the data channel demodulated using the demodulation reference obtained from the pilot channel. The second output is the data channel demodulated using the demodulation reference obtained by combining the references from the pilot channel and the rate indicator channel, using the latest ~~estimated~~ estimate of the re-encoded rate indicator modulation symbols.

[0078] During the reception of the frame, the receiver is therefore constantly given the best guess of the re-encoded rate indicator modulation symbols. The receiver regularly decodes the rate indicator bits[[,]] and re-encodes these bits into rate indicator modulation symbols. The receiver need not guess whether the rate indicator decoding was successful or not. The receiver then provides the re-encoded rate indicator code-symbols to the receiver, which uses them to generate the combined demodulation reference. In addition, the receiver memorizes which rate indicator re-encoded symbols were used by the receiver at any time.

Please amend the Abstract as follows:

Systems and methods for demodulating and decoding signals on a multi-path data channel using a pilot signal and at least one additional signal as a demodulation reference. One embodiment ~~comprises~~ includes a method in which a pilot signal is used to demodulate and decode an additional signal, and then both the pilot signal and the additional signal are used to demodulate and decode a data traffic signal. A receiver receives a data traffic signal, a rate indicator signal and a pilot signal. The pilot signal is used as a demodulation reference for the rate indicator signal. After the rate indicator signal is demodulated and decoded, this signal is re-encoded and compared to the received rate indicator signal and used in combination with the pilot signal as a demodulation reference for the demodulation and decoding of the data traffic signal and to estimate SNR for power control purposes.